

(c) separating unbound aptamer from the first sample by contacting the sample of step (b) with immobilized ligands, thereby binding the ligands to unbound aptamer, so as to recover a second sample of aptamer bound to target molecules; and

comprising a polymerase chain reaction

(d) using a quantitative replicative procedure to determine a quantity of aptamer specific for each target molecule in the second sample and therefore related to the concentration of target molecule in the first sample.--

--14. (Amended) A method according to claim 13, wherein the first sample is selected from the group of tissues consisting of organ tissue, muscle tissue, bone tissue, connective tissue, fetal tissue, and placental tissue.--

--15. (Amended) A method according to claim 1, wherein the sample is a biological fluid selected from the group consisting of blood, lymph, urine, sputum, joint fluid, spinal fluid, and saliva.--

--17. (Amended) A method according to claim 16, wherein the environmental sample is obtained from a source selected from the group consisting of plants, water, food beverages, and industrial waste.--

--18. (Amended) A method according to claim 1, wherein the immobilized ligand is immobilized on a support matrix selected from the group consisting of resins, beads, magnetic beads, gels, cellulose and silica.--

Please add the following:

--45. (New) A method for quantitatively assaying one or more target molecules in a first sample, comprising:

- B₄ E
- (a) adding to the first sample, a preparation of a nucleic acid aptamer specific for each target molecule;
 - (b) allowing target molecules in the first sample to bind with aptamer;
 - (c) separating unbound aptamer from the first sample by contacting the sample of step (b) with immobilized ligands, thereby binding the ligands to unbound aptamer, so as to recover a second sample of aptamer bound to target molecules; and
 - (d) using a quantitative replicative procedure *comprising a polymerase chain reaction* to determine a quantity of aptamer specific for each target molecule in the second sample and therefore related to the concentration of target molecule in the first sample.--
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In The Abstract

Please add the following Abstract , also submitted on a separate sheet attached herewith:

Abstract

Sub H1

A method for quantitatively assaying one or more target molecules in a sample includes, in one embodiment:

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- adding a preparation of a nucleic acid aptamer, specific for each target molecule to a first sample;
- allowing substantially all of the target molecules in the first sample to bind with the aptamer;
- separating unbound aptamer from the first sample by contacting the sample of the previous step with immobilized ligands, whereby the ligands bind to the unbound aptamer, thereby recovering an aliquot from the first sample of aptamer bound to target molecules; and
- using a quantitative replicative procedure to determine a quantity of aptamer specific for each molecule related to the concentration of aptamer in the